

Advancing Requirements Engineering through Generative AI: Assessing the Role of LLMs

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Abstract

Requirements Engineering (RE) is a critical phase in software development including the elicitation, analysis, specification, and validation of software requirements. Despite the importance of RE, it remains a challenging process due to the complexities of communication, uncertainty in the early stages and inadequate automation support. In recent years, large-language models (LLMs) have shown significant promise in diverse domains, including natural language processing, code generation, and program understanding. This chapter explores the potential of LLMs in driving RE processes, aiming to improve the efficiency and accuracy of requirements-related tasks. We propose key directions and SWOT analysis for research and development in using LLMs for RE, focusing on the potential for requirements elicitation, analysis, specification, and validation. We further present the results from a preliminary evaluation, in this context.